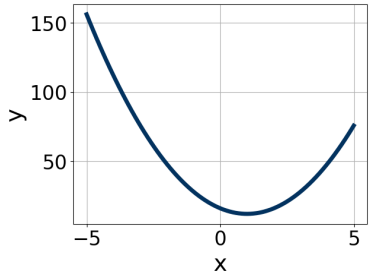
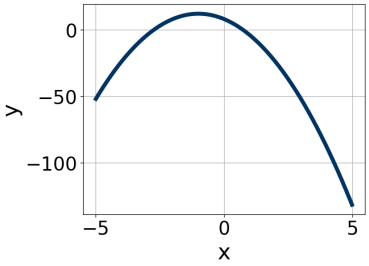
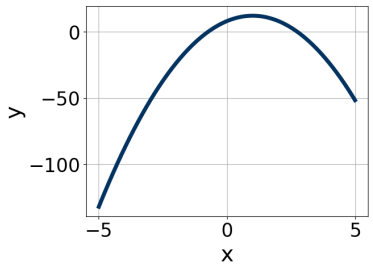
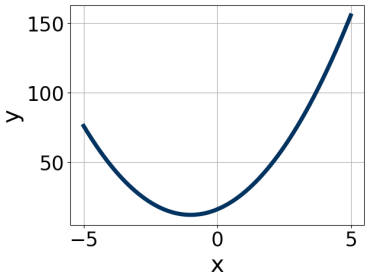
1. Graph the equation below.

$$f(x) = (x-1)^2 + 12$$

A. 

C. 

B. 

D. 

E. None of the above.

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2. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$-12x^2 - 9x + 2 = 0$$

A. $x_1 \in [-1.22, -0.45]$ and $x_2 \in [-0.98, 0.69]$

B. $x_1 \in [-14.11, -13.56]$ and $x_2 \in [12.66, 13.16]$

C. $x_1 \in [-0.3, 0.07]$ and $x_2 \in [0.71, 1.12]$

D. $x_1 \in [-2.35, -1.93]$ and $x_2 \in [10.81, 11.87]$

E. There are no Real solutions.

---

3. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$16x^2 - 40x + 25$$

A. $a \in [7.53, 9.57]$, $b \in [-14, -3]$, $c \in [1.77, 3.95]$, and $d \in [-8, -4]$

B. $a \in [1.91, 3.55]$, $b \in [-14, -3]$, $c \in [7.21, 9.2]$, and $d \in [-8, -4]$

C. $a \in [3.34, 5.88]$, $b \in [-14, -3]$, $c \in [3.86, 4.01]$, and $d \in [-8, -4]$

D. $a \in [0.64, 1.35]$, $b \in [-24, -19]$, $c \in [0.53, 1.17]$, and $d \in [-23, -16]$

E. None of the above.

---

4. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$25x^2 + 60x + 36 = 0$$

A. $x_1 \in [-6.81, -5.76]$ and $x_2 \in [-0.36, 0.06]$

B. $x_1 \in [-30.51, -28.26]$ and $x_2 \in [-30.28, -29.95]$

C. $x_1 \in [-3.92, -3.48]$ and $x_2 \in [-0.47, -0.38]$

D. $x_1 \in [-2.6, -2.14]$ and $x_2 \in [-0.95, -0.45]$

E. $x_1 \in [-2.12, 0.44]$ and $x_2 \in [-1.65, -1.18]$

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5. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$19x^2 + 11x - 9 = 0$$

A. $x_1 \in [-20.03, -19.59]$ and $x_2 \in [7.1, 8.8]$

B. $x_1 \in [-29.09, -27.92]$ and $x_2 \in [26.9, 28.8]$

C. $x_1 \in [-1.26, -0.72]$ and $x_2 \in [-2, 0.9]$

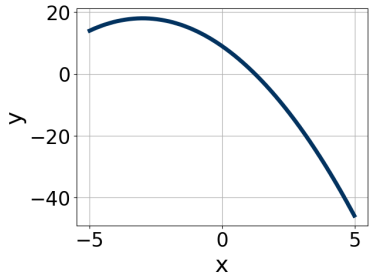
D. $x_1 \in [-0.89, -0.22]$ and $x_2 \in [0.8, 1.3]$

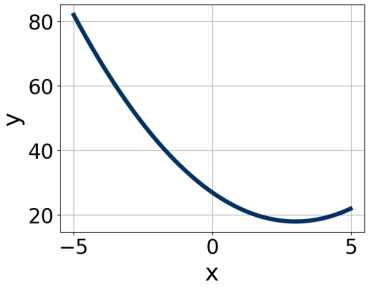
E. There are no Real solutions.

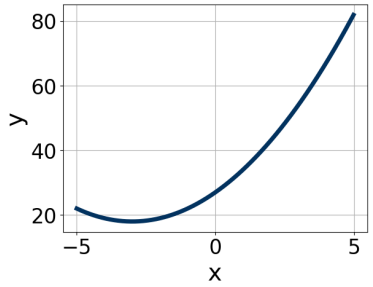
---

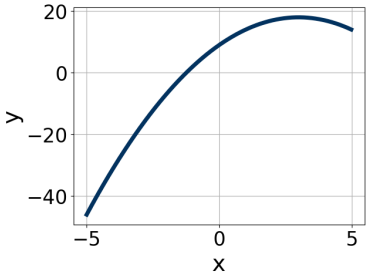
6. Graph the equation below.

$$f(x) = (x+3)^2 + 18$$

A.


C.


B.


D.


E. None of the above.

---

7. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$10x^2 - 33x - 54 = 0$$

A. $x_1 \in [-2.15, -1.09]$ and $x_2 \in [4.46, 5.37]$

B. $x_1 \in [-0.69, -0.37]$ and $x_2 \in [12.39, 13.71]$

C. $x_1 \in [-2.66, -1.74]$ and $x_2 \in [1.04, 3.51]$

D. $x_1 \in [-6.77, -5.51]$ and $x_2 \in [-1.09, 2.11]$

E. $x_1 \in [-12.07, -11.74]$ and $x_2 \in [44.34, 46.23]$

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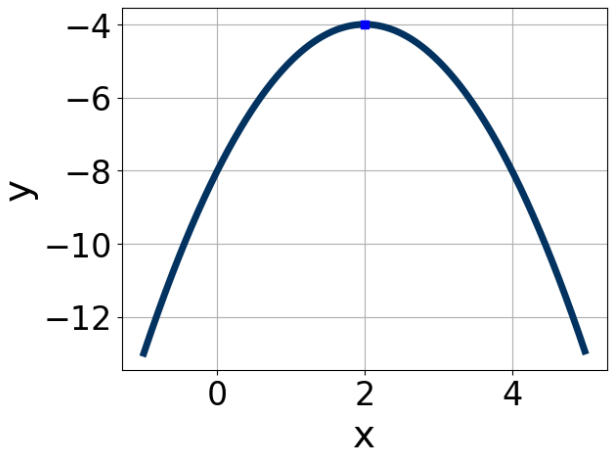
8. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [1, 2]$, $b \in [-5, -1]$, and $c \in [-2, 3]$

B. $a \in [-3, 0]$, $b \in [-5, -1]$, and $c \in [-8, -3]$

C. $a \in [1, 2]$, $b \in [3, 6]$, and $c \in [-2, 3]$

D. $a \in [-3, 0]$, $b \in [3, 6]$, and $c \in [-8, -3]$

E. $a \in [-3, 0]$, $b \in [-5, -1]$, and $c \in [-2, 3]$

---

9. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$36x^2 - 60x + 25$$

A. $a \in [3, 5]$, $b \in [-11, 1]$, $c \in [11.52, 12.36]$, and $d \in [-9, 1]$

B. $a \in [-2, 2]$, $b \in [-36, -29]$, $c \in [0.92, 1.31]$, and $d \in [-36, -22]$

C. $a \in [9, 19]$, $b \in [-11, 1]$, $c \in [2.88, 3.42]$, and $d \in [-9, 1]$

D. $a \in [4, 7]$, $b \in [-11, 1]$, $c \in [5.85, 6.18]$, and $d \in [-9, 1]$

E. None of the above.

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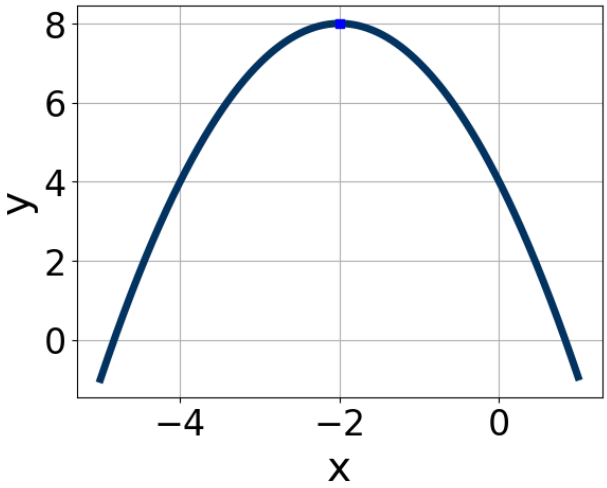
10. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [1, 2]$, $b \in [-4, -1]$, and $c \in [10, 15]$

B. $a \in [-1, 0]$, $b \in [-4, -1]$, and $c \in [3, 7]$

C. $a \in [1, 2]$, $b \in [4, 8]$, and $c \in [10, 15]$

D. $a \in [-1, 0]$, $b \in [4, 8]$, and $c \in [3, 7]$

E. $a \in [-1, 0]$, $b \in [4, 8]$, and $c \in [-13, -10]$
